October 9, 2003

Sarah Loftus McLallen
Manager, CHEMSTAR
The American Chemistry Council Petroleum Additives Panel
Health, Environmental and Regulatory Task Group (HERTG)
1300 Wilson Boulevard
Arlington, VA 22209

Dear Ms. McLallen:

The Office of Pollution Prevention and Toxics is transmitting EPA's comments on the robust summaries and test plan for 3-(dodecenyl)dihydro-2,5-furandione, Reaction Products w/ Propylene Oxide, posted on the ChemRTK HPV Challenge Program Web site on June11, 2003. I commend The American Chemistry Council Petroleum Additives Panel Health, Environmental and Regulatory Task Group (HERTG) for their commitment to the HPV Challenge Program.

EPA reviews test plans and robust summaries to determine whether the reported data and test plans will provide the data necessary to adequately characterize each SIDS endpoint. On its Challenge Web site, EPA has provided guidance for determining the adequacy of data and preparing test plans used to prioritize chemicals for further work.

EPA will post this letter and the enclosed comments on the HPV Challenge Web site within the next few days. As noted in the comments, we ask that HERTG advise the Agency, within 60 days of this posting on the Web site, of any modifications to their submission. Please send any electronic revisions or comments to the following addresses: oppt.ncic@epa.gov and chem.rtk@epa.gov.

If you have any questions about this response, please contact Richard Hefter, Chief of the HPV Chemicals Branch, at 202-564-7649. Submit questions about the HPV Challenge Program through the "Contact Us" link on the HPV Challenge Program Web site pages or through the TSCA Assistance Information Service (TSCA Hotline) at (202) 554-1404. The TSCA Hotline can also be reached by e-mail at tsca-hotline@epa.gov.

I thank you for your submission and look forward to your continued participation in the HPV Challenge Program.

Sincerely,

-S-

Oscar Hernandez, Director
Risk Assessment Division

Enclosure

cc: W. Penberthy
M. E. Weber

EPA Comments on Chemical RTK HPV Challenge Submission:
Reaction Products of 3-(Dodecenyl)dihydro-2,5-furandione with Propylene Oxide

Summary of EPA Comments

The sponsor, the American Chemistry Council, Petroleum Additives Panel, submitted a test plan and robust summaries to EPA for reaction products of 3-(dodecenyl)dihydro-2,5-furandione with propylene oxide (CAS No. 68411-58-5) dated May 23, 2003. EPA posted the submission on the ChemRTK HPV Challenge Web site on June 11, 2003.

EPA has reviewed this submission and reached the following conclusions:

1. Physicochemical Properties. The submitter needs to provide the representative structure used for each physicochemical endpoint (estimated or experimental). The submitter also needs to provide a melting point value.

2. Environmental Fate. The submitter needs to provide the representative structure used for each environmental fate endpoint (estimated or experimental). For transport and distribution EPA recommends that the submitter use a level III fugacity model instead of a level I model as indicated in the test plan.

3. Health Effects. Acute toxicity data are adequate for the purposes of the HPV Challenge Program but additional information, if available, should be added to the robust summary. EPA agrees with the submitter's plan to conduct genetic toxicity studies and a combined repeated-dose/reproduction/ developmental toxicity screening test.

4. Ecological Effects. The submitter should consider a 21-day chronic test for invertebrates (up to the measured water solubility limit) rather than the three acute tests because the calculated log k_{ow} of this chemical is >4.2. The results of the proposed water solubility and partition coefficient tests should clarify which testing is appropriate.

EPA requests that the submitter advise the Agency within 60 days of any modifications to its submission.

EPA Comments on the Reaction Products of 3-(Dodecenyl)dihydro-2,5- Furandione with Propylene Oxide Challenge Submission

Test Plan

Physicochemical Properties (melting point, boiling point, vapor pressure, partition coefficient and water solubility)

The data provided by the submitter for boiling point and vapor pressure are adequate for the purposes of the HPV Challenge Program. The submitter's plan to provide experimental data for water solubility and octanol-water partition coefficient following OECD guidelines 105 and 107, respectively, is acceptable.

Melting Point. The submitter needs to provide melting point data. If an estimated value is less than 0 °C, the submitter does not have to provide a measured value.

Environmental Fate (photodegradation, stability in water, biodegradation, fugacity)

The data provided by the submitter for biodegradation are adequate for the purposes of the HPV Challenge Program. The submitter's plan to provide data for photodegradation (using AOPWIN), and stability in water (OECD guideline 111) is acceptable.

Fugacity. In the test plan, the submitter indicates that it will use a level I model for estimating fugacity. Although EPA had previously recommended the level I model, this model is somewhat limited. EPA now recommends use of the level III model; values based on a level III fugacity model are more realistic and useful for estimating a chemical's fate in the environment on a regional basis. When developing the fugacity model, the sponsor needs to provide the assumption and data inputs to the model (see Guidance for Robust Summary preparation).

Health Effects (acute toxicity, repeated-dose toxicity, genetic toxicity, and reproduction/developmental toxicity)

Acute toxicity data are adequate but the submitter needs to provide additional robust summary information, if available. EPA agrees with the submitter's plan to conduct genetic toxicity studies (gene mutations and chromosomal aberrations) and a combined repeated-dose/reproduction/developmental toxicity screening test according to OECD TG 471, TG 474, and TG 422, respectively.

Ecological Effects (fish, invertebrates, and algae)

The submitter needs to consider a 21-day chronic test for invertebrates (up to the measured water solubility limit), rather than the proposed three acute aquatic toxicity tests. EPA has indicated (65 FR 81695) (http://www.epa.gov/EPA-TOX/2000/December/Day-26/t32498.htm) that such testing may be needed when the chemical's log K_{ow} value is $\geq$4.2. The results of proposed testing for water solubility and partition coefficient will clarify the need for this chronic test.

Specific Comments on the Robust Summaries

Health Effects

Acute Toxicity. The submitter needs to add available information on vehicle used, clinical signs observed in survivors, and in two animals that died prior to study termination, body weight, and necropsy findings.

Followup Activity

EPA requests that the submitter advise the Agency within 60 days of any modifications to its submission.